

TUESDAY MORNING

0715 – 0745 **CONTINENTAL BREAKFAST**

0745 **ACES BUSINESS MEETING**

0800 **WELCOME** **Douglas Werner**, Penn State University

0815 **PLENARY SPEAKER:** **Raj Mittra**, Penn State University
“Efficient Extraction of S-parameters of Transmission Line Discontinuities for RF and Wireless Circuit Design”

SESSION 1: FINITE ELEMENT METHODS

Chairs: Jianming Jin and Peter Monk

(Parallel with Sessions 2, 3 & 4)

0920 “Transient Electromagnetic Scattering from Curved Dielectric/Lossy 3D Bodies Using Covariant Projection Elements” R. Ordovas, S. P. Walker, & M. J. Bluck

0940 “Towards an *hp*-Adaptive Finite Element Method for Full-Wave Analysis of Waveguide” L. Vardapetyan & L. Demkowicz

1000 “An *hp*-Adaptive Finite Element Method for Maxwell’s Equations” L. Demkowicz

1020 **BREAK**

1040 “Finite Element Method for Designing Plasma Reactors” Leo Kempel, Paul Rummel, Tim Grotjohn & John Amrhein

1100 “Finite-Element Domain Decomposition Through an Iterative Algorithm: Coupling Between Cavity-Backed Slots” Anastasis C. Polycarpou & Constantine A. Balanis

1120 “Investigation of the Bunting/Davis Functional When Used with Vector Finite Elements for Waveguide Analysis” Andrew F. Peterson & Sharib Wasi

1140 “Numerical Methods for High Frequency Problems” T. Huttunen & P. Monk

SESSION 2: OPTIMIZATION IN ELECTROMAGNETICS

Chairs: Eric Michielssen and Dan Weile

(Parallel with Sessions 1, 3 & 4)

0920 “Design of Dual Band Frequency Selective Surfaces Using Genetic Algorithm” A. Monorchio, R. Mittra & G. Manara

0940 “A Study of Cauchy and Gaussian Mutation Operators in the Evolutionary Programming Optimization of Antenna Structure” Ahmad Hoofar & Yuan Liu

1000 “A Statistical Intercomparison of Binary and Decimal Genetic Algorithm” Yee Hui Lee, Stuart J. Porter & Andrew C. Marvin

1020 **BREAK**

1040 “The Compact Genetic Algorithm: A Litmus test for Genetic Algorithm Applicability” Daniel S. Weile, Eric Michielssen & David E. Goldberg

1100 “Dipole Equivalent Circuit Optimization Using Genetic Algorithm” B. R. Long, P. L. Werner & D. H. Werner

1120	“Computing the Electromagnetic Field in a Perturbed Configuration Using Modified Reduced-Order Models”	R.F. Remis & P. M. van den Berg
1140	“Some Further Results from FARS: Far-Field Analysis of Radiation Sources”	Edmund K. Miller

SESSION 3: NUMERICAL TECHNIQUES FOR PACKAGING AND INTERCONNECTS **(Parallel with Sessions 1,2, & 4)**

Chairs: Omar Ramahi and Andreas Cangellaris

0920	“A New Methodology for the Direct Generation of Closed-Form Electrostatic Green’s Functions in Layered Dielectrics”	Andreas C. Cangellaris
0940	“The Treatment of Narrow Microstrips and PCB Tracks in the FDTD Method Using Empirically Modified Coefficients”	Chris J. Railton
1000	“Time-Domain-Analysis of QTEM Wave Propagation and Crosstalk on Lossy Multiconductor Transmission Lines with Terminal Coupling”	Georg Mueller, Jan Wendel & Karl Reiss
1020	BREAK	
1040	“An MPIE-Based Circuit Extraction Technique and Its Applications on Power Bus Modeling in High-speed Digital Designs”	Jun Fan, Hao Shi, James L. Knighten & James L. Drewniak
1100	“Non-resonant Electromagnetic Simulation of Some Resonant Planar Circuits”	Yuriy O. Shlepnev
1120	“FDTD Analysis of Conventional and Novel Delay Lines”	Omar M. Ramahi
1140	“Complementary Operators for Frequency-Domain Method: A Single Simulation Implementation”	Omar M. Ramahi

SESSION 4: STUDENT PAPER COMPETITION **(Parallel with Sessions 1, 2 & 3)**

Chair: Perry Wheless

0920	“Systematic Studies in Annular Ring PBG Structures”	Todd M. Lammers, Shawn W. Staker, & Melinda Piket-May
0940	“Fast Electromagnetic Analysis Using the Asymptotic Waveform Evaluation Method”	Dan Jiao, & Jianming Jin
1000	“A Domain-Decomposition/Reciprocity Technique for the Analysis Of Arbitrarily-Shaped Microstrip Antennas with Dielectric Substrates and Superstrates Mounted on Circularly-Cylindrical Platforms”	R. J. Allard, D. H. Werner, & J. S. Zmyslo
1020	BREAK	
1040	“A New FDTD Scheme to Model Chiral Media”	A. Akyurtlu, D. H. Werner, & K. Aydin
1100	“T-Matrix Computer Code Applied to Electromagnetic Field	Rafael R. Canales, Luis F. Fonseca

Penetration in Magnetic Resonance Imaging”

& Fredy R. Zypman

TUESDAY AFTERNOON:

SESSION 5: INTERACTIVE POSTER SESSION

“Characteristics of Silicon Photoconductivity Under Near-Infrared Illumination”

Preston P. Young,
Robert Magnusson,
& Tim R. Holzheimer

“Characteristics of Fractal Antennas”

Haruo Kawakami, Yasushi Ojiro,
Yasushi Iizuka, Satoshi Kogiso
& Gentei Sato

“Feigenbaum Encryption of Computer Codes”

R. M. Bevensee

“Extension of SuperNEC to Calculate Characteristic Modes”

Thomas Abbott

“Computer Simulation of ISAR Images of PEC Models of Complicated Objects”

Nickolai Zh. Kolev

“Xpatch 4: The Next Generation in High Frequency Electromagnetic Modeling and Simulation Software”

J. Hughes, J. Moore,
S. Kosanovich, D. Kapp,
R. Bhalla, R. Kipp, T. Courtney,
A. Nolan, D. Andersh, F. German,
& J. Cook

“An Astigmatic Beam Model to be Used in Beam Tracing”

Emidio Di Giampaolo,
Marco Sabbadini,
& Fernando Bardati

“Review of Basic 3D Geometry Considerations for Intelligent CEM Pre-Processor Applications”

Kurt V. Sunderland

“Advanced Generation of Structured Hexahedral Grids for Electromagnetic Field Computations with the Finite Integration Technique”

M. Hilgner, R. Schuhmann,
& T. Weiland

“Modeling of Loaded Wire Conductor Above Perfectly Conducting Ground by Using 3D TLM Method”

Nebojsa S. Doncov,
Bratislav D. Milovanovic,
& Vladica M. Trenkic

“Discontinuous Spectral Element Approximation of Maxwell’s Equations”

David A. Kopriva,
Stephen L. Woodruff,
& M. Y. Hussaini

“Evanescence Tunneling and Quantile Motion of Electromagnetic Waves in Wave Guides of Varying Cross Section”

E. Gjonaj

“A Modal Approach for the Calculation of Scattering Parameters in Lossfree and Lossy Structures Using the FI-Technique”

Rolf Schuhmann, Peter Hammes,
Stefan Setzer, Bernd Trapp,
& Thomas Weiland

“A Modular Technique for the Calculation of Wave Guide Structures”

Johannes Borkes, Adalbert Beyer,
& Oliver Pertz

“Wave Propagation Through 2D Clusters of Coupled Cylindrical Resonators”	Ross A. Speciale
“Design Software for Cylindrical Helix Antennas”	M. Slater, C.W. Trueman (Student Paper Competition)
“The Analysis of a Center-Fed Helical Microstrip Antenna Mounted on a Dielectric-Coated Circular Cylinder Using the Reciprocity Theorem”	R. A. Martin, & D. H. Werner
“Near to Far Field Transformation for a FDTD BOR with PML ABC and Sub-Grid Capability”	Vicente Rodriguez-Pereyra, Alef Z. Elsherbeni, & Charles E. Smith

WEDNESDAY MORNING

0715 – 0800 **CONTINENTAL BREAKFAST**

0815 **PLENARY SPEAKER:** Tom Cwik, Jet Propulsion Laboratory
“Design on Computer – A Coming of Age”

SESSION 6: COMPUTATIONAL BIO-ELECTROMAGNETICS **(Parallel with Sessions 7 & 8)**
Chairs: Ray Luebbers and Susan Hagness

0920	“Numerical Investigation of Two Confocal Microwave Imaging Systems for Breast Tumor Detection”	Susan C. Hagness, Xu Li Elise C. Fear & Maria A. Stuchly
0940	“FDTD Studies on SAR in Biological Cells Exposed to 837 and 1900 MHz in a TEM Cell”	Arthur W. Guy
1000	“Modeling of Personnel Electromagnetic Radiation Hazards Deliberation of a Novice”	Alan Nott
1020	BREAK	
1040	“Modeling the EMC Performance of Implanted Medical Devices”	David Ellingson & Eduardo Villaseca
1100	“Modeling Interference Between Very Low Frequency Electromagnetic Fields and Implanted Cardiac Pacemakers”	Trevor W. Dawson & Maria A. Stuchly
1120	“Using Computational Electromagnetics to Solve an Occupational Health and Safety Incident”	Timothy Priest, Kevin Goldsmith & Dean DuRieu
1140	“Analysis of Permanent Magnet Type of MRI Taking Account of Hysteresis and Eddy Current and Experimental Verification”	Norio Takahashi, Siti Zubaidah & Takeshi Kayano

SESSION 7: VIRTUAL REALITY IN REAL-WORLD APPLICATIONS **(Parallel with Sessions 6 & 8)**
Chairs: Stan Kubina and Dennis DeCarlo

0920	“A Virtual Radiation Pattern Range and Its Uses C-130/Hercules HF Notch Antenna”	Stanley J. Kubina, Christopher W. Trueman & David Gaudine
0940	“HF Towel-Bar Antenna Location Study Aboard an H3 Sikorsky Helicopter”	Saad N. Tabet, Carl D. Myers & Dennis DeCarlo

1000	“Improving Model Confidence Through Metamorphosis”	Douglas R. Munn
1020	BREAK	
1040	“Model Morphing for Insight into the HF Assessment Parameters”	Douglas R. Munn
1100	“3D Modeling of Complex Helicopter Structures: Prediction and Measurements”	Anastasis C. Polycarpou, Dong-Ho Han, Stavros V. Georgakopoulos & Constantine A. Balanis
1120	“Increasing the Productivity of NEC Analysis with Virtual Reality and 3D Laser Scanners”	Kevin J. Cybert & Daniel D. Reuster
1140	“An Interactive HTML Based Multimedia Course on Antennas”	Ulrich Tuerk & Peter Russer

SESSION 8: EMC

Chairs: Bruce Archambeault and Jim Drewniak

(Parallel with Sessions 6 & 7)

0920	“Adding Imperfections to ECM FDTD Models as a Means of Increasing Accuracy”	Colin E. Brench
0940	“Power Conversion Techniques for Portable EMI Sensitive Applications”	Reinaldo Perez
1000	“Using the Partial Element Equivalent Circuit (PEEC) Simulation Technique to Properly Analyze Power/Ground Plane EMI Decoupling Performance”	Bruce Archambeault
1020	BREAK	
1040	“EMI Model Validation and Standard Challenge Problems”	Bruce Archambeault & James L. Drewniak
1100	“Modeling EMI Resulting from a Signal via Transition Through Power/Ground Layers”	Wei Cui, Xiaoning Ye, Bruce Archambeault Doug White, Min Li & James L. Drewniak
1120	“Techniques for Optimizing FEM/MoM Codes”	Y. Ji, T. H. Hubing, & H. Wang
1140	“Numerical Modeling of Shielding by a Wire Mesh Box”	Gerald J. Burke & David J. Steich

WEDNESDAY AFTERNOON

SESSION 9: PROPAGATION

Chairs: Steve Fast and Frank Ryan

(Parallel with Sessions 10 & 11)

1320	“A Fast Quasi Three-Dimensional Propagation Model for Urban Microcells”	Joseph W. Schuster & Raymond J. Luebbers
1340	“FDTD Techniques for Evaluating the Accuracy of Ray-Tracing Propagation Model for Microcells”	Joseph W. Schuster & Raymond J. Luebbers

1400	“A Building Database Features Pre-Processor for 3-D SBR/GTD Urban EM Propagation Models”	James Pickelsimer & Raymond Luebbers
1420	“Toward a New Model for Indoor and Urban Propagation Using Percolation Theory”	G. Franceschetti, S. Marano N. Pasquino, & I. M. Pinto
1440	“Ray Tracing Algorithm for Indoor Propagation”	C. W. Trueman, R. Paknys J. Zhao, D. Davis, & B. Segal
1500	BREAK	
1520	“Modeling Large and Small- Scale Fading on the DPSK Datalink Channel Using a GTD Ray-Tracing Model”	Kent Chamberlin, Mikhailo Seledtsov & Petar Horvatic
1540	“Rough Surface Forward Scatter in the Parabolic Wave Equation Model”	Frank J. Ryan
1600	“A Comparison of Electromagnetic Parabolic Equation Propagation Models Used by the U.S. Navy to Predict Radar Performance”	Donald de Forest Boyer & Huong Pham

SESSION 10: WAVELET AND TLM MODELING TECHNIQUES
Chairs: Wolfgang J.R. Hoefer and Peter Russer

(Parallel with Sessions 9 & 11)

1320	“The Implementation of a High Level (1st-order) Haar Wavelet MRTD Scheme”	Enqiu Hu, Poman P. M. So Masafumi Fujii, Wei Liu & Wolfgang J. R. Hoefer
1340	“Multi-Resolution Based TLM Technique Using Haar Wavelets”	Ismael Barba, Jose Represa Masafumi Fujii, & Wolfgang J.R. Hoefer
1400	“Formulation and Study of an Arbitrary Order Haar Wavelet Based Multi-Resolution Time Domain Technique”	Costas D. Sarris & Linda P. B. Katehi
1420	“Computational Optimization of MRTD Haar-Based Adaptive Schemes Used for the Design of RF Packaging Structures”	Manos M. Tentzeris
1440	“Time-Domain Simulation of Electromagnetic Wave Propagation in a Magnetized Plasma”	J. Paul, C. Christopoulos & D. W. P. Thomas
1500	BREAK	
1520	“TLM Simulation of Patch Antenna on Magnetized Ferrite Substrate”	M. I. Sobhy, M. W. R. Ng, R. J. Langley & J. C. Batchelor,
1540	“On the Practical Use of Layered Absorbers for the Simulation of Planar Microwave Circuits Using the SCN-TLM Method”	Juergen Rebel, Tobias Mangold, & Peter Russer
1600	“A Numerical Study of MEMS Capacitive Switches Using TLM”	Fabio Coccetti, Larissa Vietzorreck, Vitali Chtchekatourov, & Peter Russer
1620	“Thin Wire Modeling with the TLMIE Method”	S. Lindenmeier, C. Christopoulos

& P. Russer

1640 "What Determines The Speed of Time-Discrete Algorithms"

Tobias Mangold, Juergen Rebel
Wolfgang J.R. Hoefer
Poman P. M. So, & Peter Russer

SESSION 11: TIME DOMAIN METHODS AND APPLICATIONS
Chairs: Amelia Rubio Bretones and R. Gomez Martin

(Parallel with Sessions 9 & 10)

1320 "Introducing a New Time-Domain Electromagnetic Field Solver
LSFEMTM TD-3D"

Craig C. Ouyang, B. N. Jiang
& Nina Liao

1340 "Characteristic-Based Time-Domain Method for Antenna Analysis"

Dan Jiao, Jianming Jin
& J. S. Shang

1400 "Modeling of Thin-Wire Structures by Solving the EFIE in Time
Doman"

Friedrich Schunn
& Hermann Singer

1420 "Time-Domain Analysis of Thin-Wire Loaded Antenna Using Integral
Equations"

M. Fernandez Pantoja,
A. Rubio Bretones
& R. Gomez Martin

1440 "Haar MTD Wave Propagation Through Isotropic Plasmas"

Ismael Barba, Jose Represa,
Masafumi Fujii,
& Wolfgang J. R. Hoefer

1500 **BREAK**

1520 "Time-Domain Scattering from Arbitrarily Shaped Metallic Shelters
with Apertures: Numerical and Experimental Analysis"

Giuliano Manara
& Agostino Monorchio

1540 "Integral Equation Based Analysis of Transient Electromagnetic
Scattering from Three Dimensional Inhomogeneous Dielectric
Objects"

N. T. Gres, A. A. Ergin
B. Shanker, & E. Michielssen

1600 "Computational Properties of Wavelet Based PEEC Analysis in Time
Domain"

G. Antonini & A. Orlandi

1620 "Time Domain Modeling of a Pulsed Horn-Dish Antenna"

M. J. Bluck, S. P. Walker
& C. Thomas

1640 "Time Domain Physical-Optics Simulation Technique for
Electromagnetic Imaging by Subsurface Radar"

A. Boryssenko, V. Prokhorenko
& V. Tarasuk

THURSDAY MORNING

0715 – 0800 **CONTINENTAL BREAKFAST**

0815 **PLENARY SPEAKER:** W.C. Chew, University of Illinois at Urbana-Champaign
"Fast Solvers for Electromagnetic Simulations – A New Age Analysis Tool"

SESSION 12: MOMENT METHODS

(Parallel with Sessions 13 & 14)

Chairs: Zachi Baharav and Ramakrishna Janaswamy

0920	“Iterative Solvers for Dense Matrices Applications to Moment Method Matrices”	Juergen v. Hagen & Werner Wiesbeck
0940	“Convergence Properties of the CFIE for Several Conducting Scatterers”	William D. Wood, Jr. Kueichien C. Hill William J. Kent, Robert G. Layden & Lisa A. Cravens
1000	“Modeling of General Surface Junctions of Composite Objects in an SIE/MoM Formulation”	Joon Shin, Allen W. Glisson & Ahmed A. Kishk
1020	BREAK	
1040	“A Novel Grid-Robust Higher-Order Vector Basis Function for the Method of Moments”	G. Kang, J. M. Song, W. C. Chew K. Donepudi, & J. M. Jin
1100	“Analytical Treatment of Green’s Functions Singularities in Microstrip Structures”	E. Jimenez, F. J. Cabrera J. G. Cuevas del Rio
1120	“A Two-Stage Numerical Procedure for Extraction of Surface Wave Poles for Multilayered Media”	Ya-Xun Liu, Le-Wei Li, Tat-Soon Yeo, Pang-Shyan Kooi & Mook-Seng Leong
1140	“Higher-Order Electromagnetic Modeling of Multilayer Microstrip Structures”	Feng Ling, Kalyan Donepudi Jianming Jin

SESSION 13: CONFORMAL ANTENNAS

Chairs: Leo Kempel and Douglas Werner

(Parallel with Sessions 12 & 14)

0920	“A Conformal, Flexible, Multifunction Communication Antenna”	T. R. Holzheimer
0940	“Finite Printed Antenna Array Modeling Using an Adaptive Multi-Resolution Approach”	Lars S. Andersen, Yunus E. Erdemli & John L. Volakis
1000	“A Technique for Analyzing Radiation from Conformal Antennas Mounted on Arbitrarily-Shaped Conducting Bodies”	Dean Arakaki, Douglas H. Werner & Raj Mittra
1020	BREAK	
1040	“Using Computational Electromagnetics and Monte-Carlo Methods to Locate Antennas on Aircraft”	Kevin Goldsmith, Paul Johnson & Timothy Priest
1100	“Coupling Phenomena in Horizontal and Vertical Polarized Aperture Coupled Patch Antennas on Cylindrical Surfaces”	D. Loeffler, J. von Hagen & W. Wiesbeck
1120	“Modeling and Analysis of Wideband Conformal Antennas”	Keith D. Trott, Rene D. Guidry & Leo C. Kempel
1140	“Curvature Effects on a Conformal Log-Periodic Antenna”	Charles Macon, Leo Kempel, Keith Trott, & Stephen Schneider

SESSION 14: ANTENNA ARRAYS

(Parallel with Sessions 12 & 13)

Chairs: Keith Lysiak and Nathan Cohen

- 0920 "Problems of Characterising Array Manifolds for Naval Platforms in HF Environments" Linda Holtby
- 0940 "Designing a VHF Wrap-Around DF Antenna Array Using NEC" Keith Lysiak
- 1000 "Specifying a Direction Finding Antenna with Examples" T. R. Holzheimer
- 1020 **BREAK**
- 1040 "A High Efficiency Broad Band Wire Antenna System" Kevin J. Cybert & Daniel D. Reuster
- 1100 "Comparison of Calculations and Measurements of an Electronically Scanned Circular Array" James M. Stamm, Michael W. Jacobs & James K. Breakall
- 1120 "Array Sidelobe Reduction by Small Position Offset of Fractal Elements" Nathan Cohen & Robert G. Hohlfeld
- 1140 "The Radiation Characteristics of Recursively Generated Self-Scalable and Self-Similar Arrays" D. H. Werner & P. L. Werner

THURSDAY AFTERNOON

SESSION 15: FAST AND EFFICIENT METHODS

Chairs: Weng C. Chew and Jiming Song

(Parallel with Sessions 16 & 17)

- 1320 "Three Dimensional Scattering Analysis in Stratified Medium Using Fast Inhomogeneous Plane Wave Algorithm" Bin Hu, & Weng Cho Chew
- 1340 "Multilevel Fast Multipole Algorithm for Analysis of Large-Scale Microstrip Structures" Feng Ling, Jiming Song & Jianming Jin
- 1400 "A Novel Implementation of Multilevel Fast Multipole Algorithm for High-Order Galerkin's Method" K. C. Donepudi, J. M. Song
J. M. Jin, G. Kang, & W. C. Chew
- 1420 "Incomplete LU Preconditioner for FMM Implementation" Kubilay Sertel, & John L. Volakis
- 1440 "ParaDym-MoM Code Using FMM" Elizabeth Yip & Ben Dembart
- 1500 **BREAK**
- 1520 "A Fast, High-Order Scattering Code for Solving Practical RCS Problems" J. J. Ottusch, J. L. Visher & S. M. Wandzura
- 1540 "An Efficient Integral Equation Based Solution Method for Simulation of Electromagnetic Fields in Inhomogeneous Dielectric (Biological) Media" E. Bleszynski, M. Bleszynski & T. Jaroszewicz
- 1600 "Efficient Solution of Large-Scale Electromagnetic Eigenvalue Problems Using the Implicitly Restarted Arnoldi Method" Daniel White, & Joseph Koning
- 1620 "Fast Fourier Transform of Functions with Jump Discontinuities" Guo-Xin Fan, & Qing Huo Liu

1640	“Applications of Non-Uniform Fast Transform Algorithms in Numerical Solutions of Integral Equations”	Q. H. Liu, X. M. Xu, & Z. Q. Zhang
SESSION 16: APPLICATIONS OF THE FDTD TECHNIQUE Chairs: Atef Elsherbeni and Wenhua Yu		
1320	“A Non-Dissipative Staggered Fourth-Order Accurate Explicit Finite Difference Scheme for the Time-Domain Maxwell’s Equations”	A. Yefet & P. G. Petropoulos
1340	“FDTD Method for Maxwell’s Equation in Complex Geometries”	A. Ditkowski, K. Dridi & J. S. Hesthaven
1400	“FDTD Analysis of Tapered Meander Line Antennas for RF and Wireless Communications”	Chun-Wen Paul Huang, Atef Z. Elsherbeni & Charles E. Smith
1420	“FDTD Modeling of an Electron Cyclotron Resonance Reactor Driven by an Lisisano Coil”	Gaetano Marrocco, Fernando Baardati, & Francesco De Marco
1440	“Modeling Microwave and Hybrid Heating Using FDTD”	J. Haala, & W. Wiesbeck
1500	BREAK	
1520	“A Conformal Finite Difference Time Domain (CFDTD) Algorithm for Modeling Perfectly Conducting Objects”	Wenhua Yu, Raj Mittra, Dean Arakaki, & Douglas H. Werner
1540	“A Finite Difference Algorithm for Modeling of Conductive Wedges in 2D”	Piotr Przybyszewski
1600	“Advanced Techniques of Geometrical Modelling and CFDTD”	F. Rivas, J. P. Roa, & M. F. Catedra
SESSION 17: HYBRID TECHNIQUES Chairs: Agostino Monorchio and P. H. Pathak		
1320	“A Three-Dimensional Hybrid Technique for Combining the Finite Element and Finite Difference Method in Time Domain”	Agostino Monorchio & Raj Mittra
1340	‘Hybrid FDTD-Frequency Dependent Network Simulations Using Digital Filtering Techniques’	Ian Rumsey & Melinda Piket-May
1400	‘3D EM Problem Modeling by Geometry Decomposition and Combination of the FE, FDTD and BIE Techniques’	Hendrik Rogier, Daniel De Zutter & Frank Olyslager
1420	“Vertical Antenna Near-Field Computation in Complex Environments by a Hybrid Method”	F. Bardati, E. Di Giampaolo, A. Duranini, & G. Marrocco
1440	“Study of Electrically-Short Thin-Wire Antennas Located in the Proximity of Inhomogeneous Scatterers Using a Hybrid NEC/FDTD Approach”	A. Rubio Bretones, R. Mittra & Gomez Martin
1500	BREAK	
1520	“A Review of Some Hybrid High Frequency and Numerical Solutions	P. H. Pathak & R. J. Burkholder

for Radiation/Scattering Problems”

1540	“An Hybrid Method Combining Integral Equations and Modal Expansion Applied to the RCS Modulation of Antennas and Rotating Fans”	Andre Barka & Paul Soudais
1600	“A 2D TLM and Haar MRTD Real-Time Hybrid Connection Technique”	Masafumi Fujii, Poman P. M. So Enqiu Hu, Wei Liu & Wolfgang J. R. Hoefer

MONDAY

0700 – 0730 **CONTINENTAL BREAKFAST**

0730 – 0820 **SHORT COURSE/HANDS-ON-WORKSHOP REGISTRATION**

SHORT COURSES #1 (FULL-DAY)

“Computational Electromagnetic Methods in Mobile Wireless Communication Design”
Ray Perez, Jet Propulsion Laboratory

SHORT COURSES #2 (FULL-DAY)

“XML and Modern Internet Technologies for Scientific Applications”
Furrukh S. Khan, Ohio State University

SHORT COURSES #3 (FULL-DAY)

“The Basics of The Finite Difference Time Domain Technique for Electromagnetic Application”
Atef Z. Elsherbeni and Allen W. Glisson, University of Mississippi

SHORT COURSES #4 (FULL-DAY)

“Techniques for Electromagnetic Visualization”
Edmund K. Miller, Santa Fe, NM, and John Shaeffer, Marietta Scientific, Inc

SHORT COURSES #5 (FULL-DAY)

“EIGER – Electromagnetic Interactions Generalized: An Introduction to and Tutorial on the Software Suite”
Robert M. Sharpe and Nathan J. Champagne, Lawrence Livermore National Laboratory
William A. Johnson, Sandia National Laboratories, Donald R. Wilton, University of Houston,
And J. Brian Grant, ANT-S

HANDS-ON-WORKSHOP #6 (HALF-DAY, MORNING)

“Mathcad Basics”
Jovan Lebaric, Naval Postgraduate School

HANDS-ON-WORKSHOP #7 (HALF-DAY, AFTERNOON)

“Matlab Basics”
Jovan Lebaric, Naval Postgraduate School

SHORT COURSES #8 (FULL-DAY)

“EMI/EMC Computational Modeling for Real-World Engineering Problems”
Omar Ramahi, Compaq Corporation, and Bruce Archambeault, IBM

FRIDAY

SHORT COURSES #9 (FULL-DAY)

“Why is There Electromagnetic Radiation and Where Does It Come From?”
John Shaeffer, Marietta Scientific Inc, and Edmund K. Miller, Santa Fe, NM.

SHORT COURSES #10 (FULL-DAY)

“Recent Advances in Fast Algorithms for Computational Electromagnetics”

Weng Cho Chew, Jianming Jin, Eric Michielssen, and Jiming Song, University of Illinois at Urbana-Champaign

HANDS-ON-WORKSHOP #11 (FULL-DAY)

“Method of Moments (MoM) Using Mathcad”

Jovan Lebaric, Naval Postgraduate School

SHORT COURSES #12 (HALF-DAY, MORNING)

“Computational Electromagnetics Using Beowulf-Cluster Computers”

Tom Cwik and Daniel S. Katz, Jet Propulsion Laboratory

SHORT COURSES #13 (HALF-DAY, AFTERNOON)

“Multiresolution FEM: Introduction and Antenna Applications”

John L. Volakis, University of Michigan, and Lars Andersen, Agilent

SATURDAY**HANDS-ON-WORKSHOP #14 (FULL-DAY)**

“FD/FDTD Using Matlab”

Jovan Lebaric, Naval Postgraduate School

SHORT COURSES #15 (FULL-DAY)

“An Introduction to Radar Cross Section”

John Shaeffer, Marietta Scientific, Inc.